

Claims:

1. A gearshift mechanism for multi-gear ratio
5 transmissions, the mechanism having:

a shift rail selector element (46), provided with a
first selector tongue (47) and a second selector tongue (48),
wherein the selector tongues (47, 48) are maintained at a fixed
10 spaced apart distance from each other,

a first shift rail (28) which is connected to a first
shift fork (23) for engaging and disengaging gear ratios by
clutch means (23a), the first shift rail (28), having an
15 interlocking element (42a) for the selective engagement of the
second selector tongue (48),

a second shift rail (29) which is connected to a second
shift fork (24) for engaging and disengaging gear ratios by
20 clutch means (24a), the second shift rail (29), having an
interlocking element (42b) for the selective engagement of the
second selector tongue (48),

2. The gear shift mechanism according to claim 1
25 additionally comprising at least a third shift rail (30) which
is connected to a third shift fork (25) for acting on third
clutch means (25a), the third shift rail (30), having an
interlocking element (42c) for the selective engagement of the
first selector tongue (47).

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3. The gear shift mechanism according to claim 2,
characterized in that a first group includes two shift rails
and a second group contains at least one shift rail.

35 4. The gear shift mechanism according to claim 3,
characterized in that the shift rails are in two groups, each
group containing two shift rails.

5 5. The gear shift mechanism according to claim 1,
characterized in that each shift rail has engagement regions
for engagement with a selector tongue depending from a selector
element.

10 6. The gear shift mechanism according to claim 1,
characterized in that the distance between the selector tongues
(47, 48) is greater than the distance between two adjacent
interlocking elements.

15 7. The gear shift mechanism according to claim 1,
characterized in that which the distance between the selector
tongues is smaller than the distance between two spaced apart
interlocking elements.

20 8. The gearshift mechanism according to claim 1,
characterized in that a plurality of shift rails is provided
grouped into pairs of adjacent shift rails, the groups being
spaced apart wherein a plurality of selector tongues is
provided each of which being individually associated to one of
the pairs of the shift rails.

25 9. The gearshift mechanism according to claim 1,
characterized in that the selector element is movable in a
cross-gate travel direction transversely to the shift rails and
in an into gear direction longitudinally to the shift rails.

30 10. The gearshift mechanism according to claim 1,
characterized in that all interlocking elements (42a, 42b, 42c,
42d) have a width (A), measured in the first direction (X-X),
which is less than the width of the respective shift rail (28,
29, 30, 31) measured in the same direction (X-X).

35 11. The gearshift mechanism according to claim 10,
characterized in that the width of each of the interlocking
elements (42a, 42b, 42c, 42d) is approximately half the width

of each of the shift rails (28, 29, 30, 31).

12. The gearshift mechanism according to claim 1, characterized in that the selector tongues (47, 48) of the shift rail selector element (46) are tongues, whose width essentially corresponds to the width of the interlocking elements (42a, 42b, 42c, 42d).

13. The gearshift mechanism according to claim 1, characterized in that the shift rail selector element (46) is connected with a blocking element (58), which blocks all shift rails (28, 29, 30, 31) in a center position in relation to the second direction (Y-Y) when both selector tongues (47, 48) of the shift rail selector element (46) are in at least partial engagement with the shift rails (28, 29, 30, 31).

14. The gearshift mechanism according to claim 1, characterized in that the shift rail selector element (46) is connected with a blocking element (58), which releases only the one of all the shift rails (28, 29, 30, 31) for movement in the second direction (Y-Y), whose interlocking element is the only one which is in engagement with the selector tongue.

15. The gearshift mechanism according to claim 13 or 14, characterized in that the blocking element (58) is arranged on a support (52), which is seated displaceably in the first direction (X-X) and in this direction is connected with the shift rail selector element (46), wherein the shift rail selector element (46) is freely movable relative to the support (52) in the second direction (Y-Y).

16. The gearshift mechanism according to claim 1, characterized in that the shift rail selector element (46) is resiliently biased towards its center position by means of at least one spring element (68) at least in the first direction (X-X), in which its selector tongues (47, 48) are not in engagement with the interlocking elements of the shift rails,

or in which its selector tongues (47, 48) are in engagement with the interlocking element (42b) of a selected shift rail (29).

5 17. The gearshift mechanism according to claim 10,
characterized in that the support (52) has an extension (63) in
the first direction (X-X), which supports a pressure spring
(68), which is supported between two driver plates (69, 70),
which are stretched by the pressure spring (68) between detents
10 (71, 72) formed on the extension (63), wherein two stationary
contact faces (65, 53) are assigned to the pressure spring
(68).

15 18. The gearshift mechanism according to claim 1,
characterized in that the shift rail selector element (46) is
seated, movable in the second direction (Y-Y), on a support
(52), which in turn is seated, displaceable in the first
direction (X-X), in a housing (53), wherein the shift rail
selector element (46) has a means (51) for a connection with a
20 known selector finger (77).